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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,522	02/04/2005	Yuuji Noguchi	P26611	1319
7055	7590	03/22/2006	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			HON, SOW FUN	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	
			1772	
DATE MAILED: 03/22/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/523,522

Applicant(s)

NOGUCHI, YUUJI

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/05,3/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 2-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which does not appear to be described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear how the silica coating on the polymer particle, forming a distinct particle of diameter D, can be controlled so that both conditions of an aperture ratio of 0.1 to 1 and  $0.5 \leq h/D < 1$  are satisfied at the same time. Clarification is requested.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey (US 5,880,885) in view of McKenzie (US 3,025,764) and Hayashi (US 6,086,790).

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Bailey teaches a polymer (column 9, lines 35-37) particle (microsphere, column 7, lines 24-28) derived from a polymerizable vinyl-based monomer (column 9, lines 40-42); and a binder film covering the polymer particle, which makes a surface of the polymer particle exposed so that an aperture ratio of 0.1 to 1 is possessed (typically at least 75 percent will be exposed above the cover layer, column 10, lines 5-8, Fig. 7). Bailey fails to teach that the binder film is silica, let alone that a height  $h$  of the silica film and a diameter  $D$  of the polymer particle coated with the silica have a relationship of  $0.5 \leq h/D < 1$ .

However, McKenzie teaches a particle coated with silica film (bead core 70 coated with a layer of silica, column 9, lines 17-20), and that the silica film provides an optically significant fraction of the total diameter of the sphere lens (column 3, lines 10-13), hence providing a height  $h$  which overlaps the claimed relationship of  $0.5 \leq h/D < 1$ , for the purpose of providing an optically significant difference. McKenzie teaches that the silica film is adherent (column 2, lines 65-70), thus acting as a binder film. McKenzie fails to teach that the silica film includes a polyalkoxysiloxane oligomer condensate.

However, Hayashi teaches that a silica layer can be formed from alkoxysilane (column 5, lines 37-41) wherein the alkoxysilane serves as an inorganic binder when formed into a film, connecting particles (column 6, lines 1-5). An alkoxysilane is a homologous precursor of a polyalkoxysiloxane oligomer before polymerization. See MPEP 2144.09.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have partially coated the polymer particle of Bailey, wherein the polymer particle is exposed so that an aperture ratio within the range of 0.1 to 1 is possessed, with a silica film wherein the silica film has a height  $h$  related to the diameter  $D$  of the polymer particle coated with silica as  $0.5 \leq h/D < 1$ , in order to provide an optically significant difference, as taught by McKenzie, and wherein the silica film includes a polyalkoxysiloxane oligomer condensate, in order to utilize the desired binding properties of the polyalkoxysiloxane oligomer precursor, as taught by Hayashi.

***Allowable Subject Matter***

3. Claims 2-12 would be allowable if clarification of the specification is provided to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action. The closest prior art of record, US 5,880,885 fails to teach or suggest, even in view of US 3,025,764 and US 6,086,790, a coating composition comprising the combination of a polymer particle coated with silica comprising: a polymer particle derived from a polymerizable vinyl-based monomer, and a silica film covering the polymer particle, which makes a surface of the polymer particle exposed so that an aperture ratio of 0.1 to 1 is possessed, and a height  $h$  of the silica film and a diameter  $D$  of the polymer particle coated with silica have a relationship of  $0.5 \leq h/D < 1$ , wherein the silica film includes a polyalkoxysiloxane oligomer. None of said references teach that the silica film covering the polymer particle forms a distinct particle of diameter  $D$

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wherein the combination of the two relationships of  $0.5 \leq h/D < 1$  and aperture ratio of 0.1 to 1 are met.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*S. Hon*

Sow-Fun Hon

03/20/06

*Harold Pyon*

HAROLD PYON  
SUPERVISORY PATENT EXAMINER

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3/20/06